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ATTACHMENT J-10
SURFACE STATEMENT OF OBJECTIVES

1 INTRODUCTION

1.1 SCOPE

This attachment to the contract applies to any type of work performed on Surface Assets and major components of the Surface Asset used or intended for use with the Surface Asset. Included in these Surface Assets are, for example, new cutters, legacy cutters, and small boats. Any of these are hereafter referred to as a "Surface Asset" for the purpose of applicability to this attachment. This work may include new construction, conversion, major modification, upgrade, maintenance and repair of all magnitudes, operations and support, and Asset disposal, as well as design, engineering and analysis work. The description of scope for each Contractor-developed SOW generated from this SOO shall clearly define the specific products and services to be delivered to the Government as a result of performance of the SOW. Delivery of data may be described by reference to the applicable Contract Data Requirements List (CDRL).

1.2 STRUCTURE OF THIS ATTACHMENT

This attachment is structured such that it is applicable to all types of work as indicated above. There are two main sections to this attachment in addition to this introductory Section. The General Requirements Section contains tasks required to be performed as a part of the task and/or delivery orders for all phases of work addressed in this attachment. The Asset Phased Procurement Section (3) includes five subsections, each of which invokes the General Requirements Section tasks and further describes the minimum tasks to be performed for sequential acquisition phases as follows:

- Concept & Technology Development (3.1 Concept Design) includes but is not limited to conducting studies, analyses, and tests, where appropriate, of various concept design alternatives to establish technical feasibility, demonstrating the capability to comply with applicable performance specifications, requirements and standards, and identifying associated risks with the Surface Asset meeting these requirements.

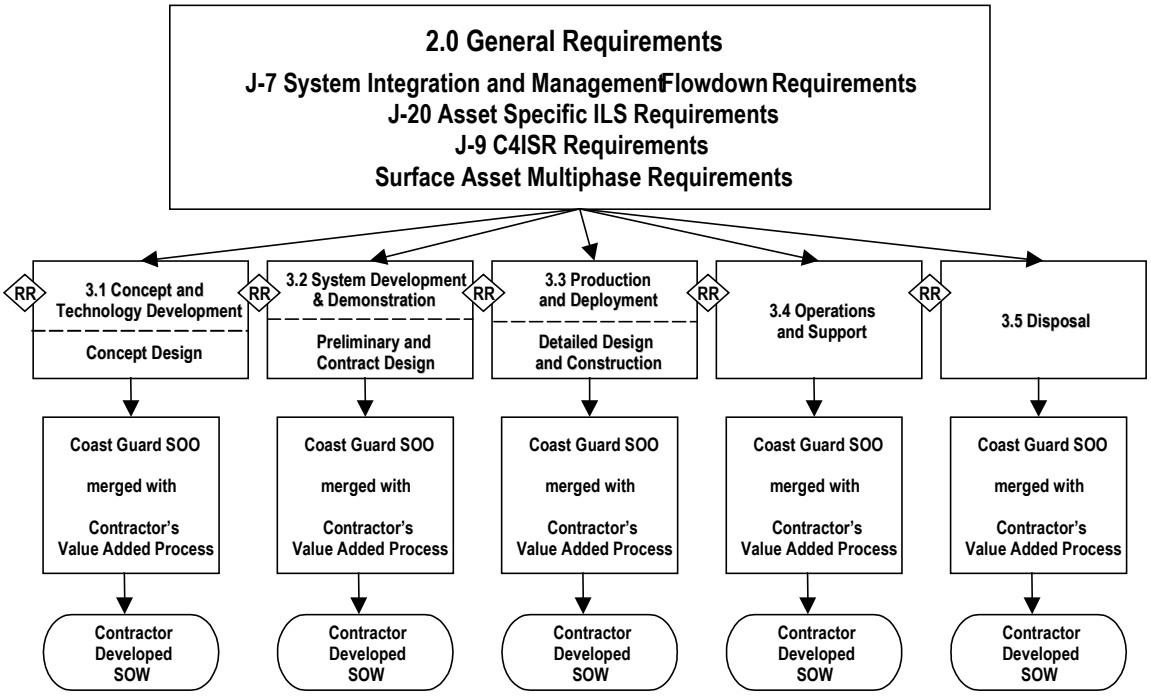
- Development & Demonstration (3.2 Preliminary and Contract Design) includes but is not limited to more detailed design and analysis and technology development for each IDS Surface Asset in order to validate the capability to meet all performance specifications with no or acceptable risk and to establish the Asset price if not already established.

- Production & Deployment (3.3 Detailed Design and Construction) includes but is not limited to the development, fabrication, modification, test, qualification and delivery of the Surface Asset that meets the applicable requirements of the Surface Asset Performance Specification, Technical Specification(s) and Cutter Specific Certification Matrix.

- Operations & Support (3.4) includes but is not limited to elements addressing the sustainment of the Surface Asset throughout its service life in accordance with the Contractor's Integrated Support Plan (ISP) and Concept of Operations Plan.

- Disposal (3.5) includes but is not limited to tasks to properly dispose of, decommission, store, preserve, or reactivate the Surface Asset.

Surface Asset Statement of Objectives Structure / SOW Development Flow



The figure above depicts the structure of this attachment and how it relates to the Contractor's SOW Development process.

Not all work on Surface Assets requires execution within all five procurement phases. For example, the Contractor's initial effort associated with a SHIPALT (or ECR) identified and developed by the Coast Guard may commence in the "Detailed Design and Construction" phase.

2 GENERAL REQUIREMENTS

2.1 PROJECT MANAGEMENT

The Contractor shall perform Surface Asset specific project management for each Surface Asset in addition to IDS project management. It shall comply with all requirements set forth in section 2.1, including all subsections, of attachment J-7, the statement of work for IDS Systems Integration and Management. In addition, the Contractor shall assign a Surface Asset project manager specifically charged with the responsibility to establish, implement and maintain a management system and organization that will plan, organize, control, coordinate and oversee all contract activities relating to the Surface Asset task and/or delivery orders. The Contractor shall also fully integrate sub-contractors and vendors to provide overall direction and guidance, track progress and status, and integrate products and services provided by major sub-contractors and vendors with the products and services provided by the Contractor.

2.1.1 REVIEWS AND AUDITS

In addition to the Post Award Conference, Project Management Review, and Technical Review requirements invoked from section 2.1.9, including all subsections, of attachment J-7, the statement of work for IDS Systems Integration and Management, the Contractor shall conduct phase-appropriate reviews and audits as described throughout Section 3 of this document. Department of Defense (DoD) 2000.2(series), Mandatory Procedures for Major Defeense Acquisition Programs (MDAPs) and Major Automated Information Systems (MAIS) Acquisition Programs, and Chapter 11 of DSMC Systems Engineering Fundamentals (http://www.dsmc.mil/pubs/gdbks/sys_eng_fund.htm) may be used for guidance. In addition to the requirements identified in Section 3, the Contractor may propose additional reviews/audits as deemed necessary, and shall implement all such reviews and audits in the appropriate phase as determined by the Contractor and approved by the Government.

2.2 QUALITY ASSURANCE

The Contractor shall provide and maintain a Surface Asset-specific quality assurance system as part of the IDS quality assurance system. It shall comply with all requirements set forth in the Quality Assurance section of Attachment J-7, including all subsections.

2.3 DATA MANAGEMENT

The Contractor shall ensure that all information for Surface Asset task and/or delivery orders resides on the Integrated Product Data Environment (IPDE) required in Attachment J-7 as the data repository for all information required by this SOO including design and engineering work, logistics, production, management and other information which provides insight into the development and management of Surface Assets and task and/or delivery orders.

2.4 ENVIRONMENTAL MANAGEMENT

The Contractor shall establish and implement a Surface Asset-specific Environmental Management program as part of the IDS environmental management program. It shall comply with all requirements set forth in Section 2.4, including all subsections, of Attachment J-7, the Statement of Work for IDS Systems Integration and Management.

2.5 SYSTEMS ENGINEERING

The Contractor shall establish and implement a Surface Asset-specific systems engineering program as part of the IDS systems engineering program. It shall comply with all requirements set forth in section 2.5, including all subsections, of Attachment J-7, the Statement of Work for Systems Integration and Management.

2.6 ASSET INTRINSIC C4ISR

The Contractor shall develop and deliver Surface Asset-intrinsic C4ISR hardware and software in accordance with the requirements of attachment J-9 of Statement of Objectives for IDS C4ISR, and the C4ISR architecture required in section 2.6, including all subsections, of

attachment J-7, Statement of Work for IDS Systems Integration and Management. Asset Intrinsic C4ISR task descriptions shall be provided in a companion SOW(s) to be prepared and provided by the Contractor as an attachment to any overarching Asset SOW developed from this SOO.

2.7 LOGISTICS

The Logistics Requirements Matrix contained in Attachment J-20 lists requirements for system and Asset level logistics development, design, production, implementation and disposal by ILS element. In developing an Asset Statement of Work (SOW) from this SOO, the Contractor shall tailor this matrix for the Asset by proposing additions, deletions and modifications consistent with their Asset and IDS ISP, CONOP, Integrated Master Schedule, Integrated Master Plan, Implementation Plan, and unique production and support capabilities and processes. The matrix shall identify the Asset applicability of, and proposed responsibility for, each requirement in each procurement phase in accordance with the instructions provided in Attachment J-20. The Contractor shall provide this tailored Logistics Requirements Matrix as an attachment to the proposed Asset SOW. This attachment shall further include the specific, detailed, and phase-appropriate logistics work task descriptions for all Logistics Requirements Matrix requirements identified as either "Contractor" or "Joint" responsibility in the procurement phase for which the SOW is being developed.

2.8 TEST AND EVALUATION

The Contractor shall establish and implement a Surface Asset-specific test and evaluation program in accordance with all requirements set forth in Section 2.8, including all subsections, of Attachment J-7, the Statement of Work for Systems Integration and Management.

Consistent with the requirements of Attachment J-7, the Contractor shall conduct testing of Surface Assets in accordance with the Asset Test & Evaluation Program Plan (TEPP) to support all phases. The Asset TEPP shall be in accordance with the IDS Test and Evaluation (T&E) Program Plan and shall define how the Contractor will demonstrate that the Asset meets all of the requirements of the Asset Performance Specification, technical specification, and relevant requirements of the System Performance Specification. The Asset TEPP shall define how the Contractor will demonstrate that all interface requirements between the Asset and the rest of the IDS have been met. The Asset TEPP shall distinguish between testing to be accomplished before and after preliminary acceptance for each Asset of a particular class or configuration, including any testing with other IDS Assets. The Asset TEPP shall document the level of testing of C4ISR equipment and/or systems installed on the Surface Asset even if they were developed or procured under separate task and/or delivery order(s).

Testing of major newly developed software (e.g. Machinery Control System, Integrated Bridge System, Distributed Sensing/Monitoring system) shall be in accordance with the Software Acquisition, Development and Integration Plan. The Asset TEPP shall depict the integrated testing of Surface Asset equipment/systems and associated new software.

The Contractor shall prepare and employ test procedures/reports to properly and completely test components, equipment, subsystems, and systems, from preliminary early stage construction

testing through Surface Asset trials, and to document test results. Wherever practicable, test procedures shall include the values of design and performance parameters (minimum and maximum) so that actual test measurements can be readily compared to design criteria. Shop, operational, performance, and installation tests of shipboard systems shall be performed in accordance with the Society of Naval Architects and Marine Engineers (SNAME) Technical and Research Bulletin (T&R) Number 3-39, or equal.

2.9 CONCEPT OF OPERATIONS

The Contractor shall develop and maintain an Asset specific concept of operations plan reflecting realistic operational deployment of the Asset. The Asset concept of operations plan shall be consistent with the IDS concept of operations plan and shall comply with the requirements set forth in the Concept of Operations Plan section of Attachment J-7, the Statement of Work for Systems Integration and Management.

2.10 TASK AND DELIVERY ORDER PLANNING AND DEVELOPMENT

Following the initial Surface Asset delivery order, the Contractor shall comply with the requirements of the Task and Delivery Order Planning and Development section 2.10, including all subsections, of Attachment J-7, SOW for IDS Systems Integration and Management, to define and plan Surface Asset work for the subsequent procurement phase.

2.11 DRYDOCKING FACILITIES AND SHIPBUILDING WAYS CERTIFICATION

Drydocking, launching, building ways, and transfer facilities and methods employed in the performance of this contract shall be certified by either of the two following methods:

(a) In accordance with the standards and criteria of an internationally recognized certifying authority acceptable to the Contracting Officer, (examples of such authorities include, but are not limited to, the American Bureau of Shipping (ABS), Lloyds Registry of Shipping, Det Norske Veritas, Engineering, Inc.)

(b) In accordance with MIL-STD-1625, Safety Certification for Dry dock Facilities and Building Ways for U.S. Navy Ships.

The Contractor shall provide evidence of current certification.

The Contractor may propose an alternate dry docking/launching method for those situations not covered by the existing certification criteria. The documentation to support this proposal shall be as close as practicable to that required by the existing certification criteria and shall identify any potential impact/modification to the Surface Asset's structure. Additionally, the Contractor shall submit certification from an independent naval architect, acceptable to the Contracting Officer, which shall certify that the method being proposed, including equipment and procedures, complies with sound naval architectural principles and engineering practices.

2.12 CARE OF THE SURFACE ASSETS DURING CONSTRUCTION

The Contractor shall maintain all Surface Assets, including all Government-furnished material and Contractor-furnished material, in a good condition during the entire period the Surface Asset is in the Contractor's possession. The objective is to eliminate damage or deterioration of the Asset and its equipment and to reduce the potential for fires and accidents while it is in the possession of the Contractor during construction or repair.

Surface Assets shall be maintained in a neat and orderly condition. Waste material shall be collected and removed as it accumulates. Tanks and voids and other inaccessible spaces shall be cleaned and inspected before being closed.

Appropriate measures shall be taken to minimize wear and damage incidental to construction and to prevent corrosion or other deterioration. For example, electric motor strip heaters shall be activated as soon as power can be made available. Otherwise, heat lamps or other heating devices shall be provided for all electric motors and other equipment subject to damage from condensation. Machine parts, both interior and exterior, shall be protected against corrosion and deterioration during the interval between manufacture and Asset delivery. If removal of preservative is necessary for testing the machinery or equipment prior to installation, the Contractor shall preserve and protect the machinery or equipment in accordance with the manufacturer’s instructions. Preservative on working parts shall be removed prior to operation of the machinery or equipment. Piping, machinery, and equipment shall be protected from damage such as freezing or other adverse environmental conditions. Equipment, prefabricated parts, furniture, outfit and outfitting material stowed in warehouses or on piers during construction of the Asset, shall be free of vermin before being placed onboard. Parts and equipment, including those having working surfaces or passages, or piping for lubricating and hydraulic oil, shall be kept clean and protected during manufacture, storage, assembly, and installation. Louvers and vents on equipment shall be covered when equipment is not in use for prolonged periods.

Prior to delivery, the Asset interior and exterior shall be swept, washed down, or otherwise cleaned, and put in a habitable condition for the crew.

2.13 LAUNCHING AND DRYDOCKING

The Contractor shall be responsible for the safe launching and dry docking of each Surface Asset and its condition of stability when waterborne. The time and manner for launching shall be mutually agreed upon by the Contractor and the COTR. Launching data shall be prepared for each Asset.

If the Asset is strained or damaged as a result of launching or dry docking, the Contractor shall dry dock the Asset as soon as possible to effect repairs.

The Contractor shall clean and paint the underwater portions of the Asset as late in the construction period as feasible. Anti-fouling paint shall not be applied more than 30 days before launching. Final coat of anti-fouling paint shall be applied during the last docking before delivery, if practicable, but not more than one year before delivery.

2.14 WEIGHT CONTROL

The Contractor shall establish and maintain a weight control program to ensure that Surface Assets are delivered or re-delivered with intended service life margins for weight and center of gravity. The Contractor shall use the Society of Allied Weight Engineers Recommended Practice No. 12 for guidance. The program shall be documented by a Weight Control Plan.

The Contractor shall submit a Baseline Weight Estimate (BWE) for new construction of Surface Asset(s) at the end of Contract Design. The BWE shall consist of a lightship weight estimate including space and weight reservations, and separate accounts for Design & Building, Contract Modification, and the Full Load (Condition D) loads, in accordance with the Cutter Specific Certification Matrix, Attachment J-13b, and Government Furnished Material (GFM) margins as applicable. The BWE values for Full Load (Condition D) Displacement, vertical center of gravity (KG) are the basis for measuring Contractor responsibility within the meaning of this requirement. The aforementioned BWE values including Design & Building, Contract Modification, and GFM margins for the Surface Asset(s) under this contract shall meet the requirements for the Service Life Allowances (SLA) for displacement and KG required in the Cutter Specific Certification Matrix. The Contractor shall be responsible for the delivery of the Surface Asset(s) within the trim and list requirements specified in the Surface Asset Performance Specification.

The net weight and moment effect of any changes incorporated into this contract shall be included in the Supplemental Agreement for the change.

The Contractor shall deliver the Surface Asset with Service Life Allowances for displacement and KG required by the Cutter Specific Certification Matrix, minus the weight and vertical moment values agreed upon for contract changes and differences to GFM in excess of the margins included in the BWE.

For modifications/conversions to legacy cutters that represent a net change of more than two (2) per cent to the light ship displacement or to the vertical center of gravity, or that will result in a final full load displacement or KG that is within 2% of the limiting values, the Contractor shall prepare and submit a Baseline Weight Estimate (BWE) for the individual Surface Asset(s) based on the best weight and KG information available. This shall be submitted at the end of Contract Design. The BWE shall consist of a lightship weight estimate including separate accounts for Design & Building margin of the change and Contract Modification margin based on the change, and the Full Load (Condition D) loads, in accordance with the Cutter Specific Certification Matrix, Attachment J-13b, and Government Furnished Material (GFM) margins if applicable. The BWE values for Full Load (Condition D) Displacement and vertical center of gravity (KG) are the baseline for measuring Contractor responsibility within the meaning of this requirement. The Contractor shall demonstrate and ensure that the remaining Service Life Margin for displacement and KG is not exhausted for the Surface Asset, and that any additional future changes proposed for the Surface Asset in accordance with the Contractor's Implementation Plan can be accommodated within the limiting displacement and KG. The Contractor shall re-deliver the Surface Asset with positive Service Life Allowances for displacement and KG remaining. The Contractor shall be responsible for the delivery of the Surface Asset(s) within the trim and list requirements specified in the Surface Asset Performance Specification.

The net weight and moment effect of any changes incorporated into this contract shall be included in the Supplemental Agreement for the change.

For other modifications to legacy cutters with smaller net changes in displacement and vertical center of gravity than noted above, the estimated weight and moment changes shall be defined in the technical specification. Should the limits for net change be exceeded during design development, the above requirements shall apply.

2.15 PROGRAM MANAGER'S REPRESENTATIVE OFFICE (PMRO) FACILITIES

Consistent with requirements of the Inspection Facilities section of Section E., office facilities and services shall be provided and maintained for the Program Manager's Representative (PMR) and Staff and Nucleus Crew 1 at each facility where either new construction or extensive repair/ modification occurs. There will be twenty people at the PMRO for the National Security Cutter. The Government will assign personnel during the Preliminary and Contract Design phase. Table J-10-1 below enumerates requirements for these 20 people for the PMRO for the National Security Cutter. The number of people comprising the PMRO may vary depending on the complexity of the Surface Asset work. The facility requirements enumerated in the table below will then vary proportionally. For example, new construction of a 110 class cutter would require about 15 persons. The requirements in the table for the Nucleus Crew 1 are separate from and in addition to the requirements for the PMRO.

(a) The facilities to be provided shall be equal to those provided by the Contractor for his use for the purpose of visibility into design, engineering, process, production and testing administration and management under the IPPD process. The offices provided shall be located with the shipyard management offices to facilitate an IPPD relationship between the Government and the Contractor. The Government will provide the Contractor with at least 60 days notification of when the first facilities will be required at each site.

(b) The Contractor shall provide separate but adjacent offices (private and open as indicated in the table below), facilities, and a conference room (see below). The Contractor shall also provide restrooms, shower spaces, and a changing area with lockers for all Government personnel. These spaces shall be of adequate size for such purposes and shall be furnished, ventilated, lighted, and heated. The Contractor shall furnish services for keeping the rooms orderly and clean. Air conditioning and interior communication shall be provided in the offices that are utilized. The office and equipment table included herein, as sets forth the minimum acceptable facilities and furnishings that shall be provided by the contractor and may be modified from time to time under the provisions of this contract.

(c) The Contractor shall provide and maintain telephones in the Contractor's telephone system for the PMR and his staff and the Nucleus Crew 1 and provide at least one telephone line per person to be direct dial local, or long distance (not through the shipyard switchboard). Voice mail capabilities shall be included with the telephone service for each line. The PMR's phone shall be speaker and

conference call equipped. The Contractor shall provide and maintain an independent computer network for the Government personnel with direct connection to the internet with comparable speed to that provided for the System Integration and Management (SIM) IPPD worksite. The Contractor shall ensure that the Government representatives have connectivity to the IPDE, and access to and the capability to view any other Surface Asset-related information, including design, production, testing, logistics, configuration management, and quality assurance documentation. In any case, this system shall have the same functionality as that of the contractor counterparts; including office software included in attachment J-18 and other specialty software for the purpose of facilitating the IPPD relationship. The contractor shall test all computers, connectivity and peripherals (e.g. printers, plotters) in the office to ensure proper operation of the various software applications and shall provide continuous technical support. The Contractor shall include in the contract price the full cost of providing all telecommunications service except for long distance telephone calls. Long distance calls shall be billed to the Government on the basis of actual cost.

(d) The conference room shall include a conference table, chairs for 20 people, and a video-teleconference facility. The latter shall include an additional network-connected computer (IPDE/Internet) with camera and phone line, and TV monitor with video-cassette recorder, and shall be compatible with the SIM IPPD worksite. The conference room shall also contain an installed computer/video presentation machine and large screen.

(e) Parking Spaces. The Contractor shall provide parking spaces for Government personnel comparable to their counterparts within the Contractor’s organization, and within close proximity to the Government office spaces.

(f) Nucleus Crew 1 will consist of a number of ship’s force personnel equal to 5% of the crew size, rounded up, for each Surface Asset under construction. The Contractor shall provide equal comparable facilities as indicated for the PMRO, except where specifically noted. The Contractor shall provide the facilities starting one year before the Surface Asset trials and through the end of the Surface Asset Post Delivery Availability (PDA).

(g) The Contracting Officer may, by written notice to the Contractor, substitute, eliminate, or add to the office facilities or services specified in this general requirement. If any such substitution, elimination or addition increases or decreases the Contractor's cost, an equitable adjustment will be made in accordance with the clause of this contract entitled "CHANGES-FIXED PRICE."

Table J-10-1. PMR OFFICE SPACE AND EQUIPMENT

Office Equipment	PMR Office	Nucleus Crew 1
Number of Private Offices included in Space	2	Note 1
Double Pedestal Desk and Chair	20	Note 2
4 – 6 Drawer Lay-Flat Drawing File Cabinet	2	1
High Capacity Copier or ready access thereto	1	-
5-Drawer File Cabinet-Legal Size	20	Note 3
Telephone Lines	20	Note 2
Plain Paper Telefax (w/ Separate phone line)	1	1
Parking Spaces Assigned (near office)	20	Note 2
Bicycles	10	Note 3
Conference Room (described above).	1	-
White Board (minimum of 12 Sq. ft)	3	1
Plan Review Table for “H” size drawing	4	1
Clothes Locker	20	Note 3
Side Chair	8	Note 3
Book Case	10	Note 3
Xerox or Similar Dry Copy Machine (Model 220ST or equal)	1	1
Personal Computer in accordance with attachment J-18.	20	Note 2
Oversized- CAD Quality Computer monitor (24” min.)	4 (part of 20 computers noted above)	1
Letter Quality Printer (HP LaserJet IV SI or equivalent)	3	1
Plotter (Hewlett-Packard Designjet 1000 or equivalent)	1	-

Notes for Nucleus Crew 1:
1. Minimum of two private offices
2. One for each person
3. One for every two persons

3 ASSET PHASED PROCUREMENT

The following sections describe the objectives for the phased progression of Asset-related work from concept and technology development through disposal. The objectives and the associated minimum requirements presented in each section, in addition to the general requirements of Section 2, form the basis for Asset- and phase-specific task and/or delivery order SOW development in accordance with the Task and Delivery Order Planning and Development, Section 2.10. For all procurement phases appropriate to an Asset, the contractor shall augment and expand upon these minimum requirements to define the complete and detailed work effort required to achieve the stated objectives. Note that not all phases need apply to all Assets. For example, for near term retirement of a legacy Asset only support and disposal tasks may apply; if concept and technology demonstration was accomplished during Phase I, it may not need to be repeated; if no contractor support is proposed, operations and support tasks may not apply.

3.1 CONCEPT AND TECHNOLOGY DEVELOPMENT (CONCEPT DESIGN)

The objective of this phase is for the Contractor to develop a concept design for the Asset at a level that demonstrates feasibility of the concept design.

3.1.1 GENERAL

The Contractor shall perform all tasks identified in Section 2, General Requirements, in a manner consistent with the objectives of this procurement phase. The Contractor shall mature the concept or technology to a level that provides a robust assessment of design considerations, alternatives, and risks and bounds the parameters of the design or impact on existing Asset/s and the IDS. The concept shall be fully integrated with the IDS and other IDS Assets.

3.1.2 DEVELOP OR REVISE SURFACE ASSET PERFORMANCE SPECIFICATION

The Contractor shall develop Asset Performance Specifications (applicable for new designs) in accordance with the Asset Performance Specification Template (Attachment J-22), or propose revisions to the current Asset Performance Specification (Attachment J-5). The Performance Specification shall be as detailed as is practicable, consistent with the level of design development and will become a contract document for subsequent phases.

3.1.2.1 Develop or Revise the Cutter Specific Certification Matrix

The Contractor shall develop the Cutter Specific Certification Matrix in accordance with the Cutter Certification Implementation Plan (Attachment J-13) for new designs, or propose a change to an existing Cutter Specific Certification Matrix applicable to the Asset. The level of completion of the Cutter Specific Certification Matrix shall be consistent with the level of detail of concept development.

3.1.3 CONCEPT DESIGN

The Contractor shall develop a concept design as applicable for a new Asset or a concept for modification, alteration, upgrade or repair of an existing Asset which demonstrates the feasibility

of the concept's compliance with the SPS, applicable performance specifications, and standards of the applicable Cutter Specific Certification Matrix, and demonstrates substantive technical feasibility. The Contractor shall update or develop and provide a Surface Asset Concept Design Report which includes but is not necessarily limited to:

(a) Analysis of Alternatives
(b) Principal Design Characteristics
(c) Concept of Operations
(d) Critical Issues and Risks
(e) Performance Specification
(f) Technical Drawings
(g) Environmental Issues
(h) OE and TOC Impact

3.1.4 PLANNING FOR SYSTEM DEVELOPMENT AND DEMONSTRATION (PRELIMINARY AND CONTRACT DESIGN)

The Contractor shall provide a plan for System Development and Demonstration (Preliminary and Contract Design) in accordance with the requirements of section 2 herein.

3.1.5 FINAL CONCEPT DESIGN REVIEW

The Contractor shall conduct a final concept design review with Government personnel to establish the adequacy of technical maturity, integration with the IDS, feasibility of the concept to meet the performance specifications or modifications thereof, and capability to provide the proposed logistics support. This review shall include results of the work performed during concept design reflected in the Concept Design Report and shall demonstrate that the Contractor has met all requirements of the delivery order.

3.2 SYSTEM DEVELOPMENT AND DEMONSTRATION (PRELIMINARY AND CONTRACT DESIGN)

The objective of this phase is for the Contractor to complete Preliminary and Contract Design of the Surface Asset, for either new construction, modification, alteration, upgrade or repair of Surface Assets.

3.2.1 GENERAL

The Contractor shall perform all tasks identified in Section 2, General Requirements, in a manner consistent with the objectives of this procurement phase. The Asset shall comply with the System Performance Specifications, Asset Performance Specification, and the Cutter Specific Certification Matrix and shall be fully integrated with the IDS and other IDS Assets and comply with the C4ISR Architecture. If the Asset Performance Specification is not complete, it shall be finalized during this phase and become a contract document. Further, the objective of this phase is to demonstrate that the proposed design is technically feasible and capable of meeting applicable requirements and specifications with no or acceptable risk. Further, the design should be of sufficient maturity and detail to form a sound basis for the price of the Asset for the next phase. By completion of this phase the Contractor shall develop the fundamental configuration

documentation for the Asset including the Asset technical specification and associated contract design drawings.

3.2.2 REVISE CONTRACT CONFIGURATION DOCUMENTATION

3.2.2.1 Refine and Complete the Asset Performance Specification

For other than near-term Assets as defined in Phase 1, the contractor shall refine and complete the Asset Performance Specification in accordance with the performance specification template (Attachment J-22). The Performance Specification shall enumerate and describe the salient design features and functionality proposed by the contractor that validates the proposed capability of the Asset and to which the contractor commits to provide in the Asset. The Contractor and the Government will mutually agree on a milestone date that marks the completion of the performance specification of the Asset.

The objective of the completed performance specification in this phase, with enhanced identification of functionality, is to identify, by contract, not only the contractor-developed performance capabilities but also the contractor-developed design features and functionality in better detail. This Performance Specification will then serve the purpose of the contract configuration document for the Asset in addition to the Cutter Specific Certification Matrix. The additional information in the Performance Specification captures the functional maturity of the design, substantiates the ability to meet the Asset performance and capabilities, and still provides flexibility to the contractor to modify the design without the need for contract modifications. The Contractor will then develop a technical specification (such as the traditionally-known Ship Specification) and Contract Design Drawings which will be derived from the Performance Specification and which will then remain under the configuration control of the Contractor.

3.2.2.2 Revise Cutter Specific Certification Matrix and Plan

The Contractor shall complete or propose revisions of the Cutter Specific Certification Matrix (Attachment J-13) as necessary. Changes to the Cutter Specific Certification Matrix shall be processed in accordance with the Cutter Certification Implementation Plan (Attachment J-13) and shall be consistent with the Asset Performance Specification.

Compliance of the Asset with all standards of the Cutter Specific Certification Matrix shall be certified. The Contractor shall ensure all standards of the Performance Specification and Cutter Specific Certification Matrix are certified either by self-certification or by an independent agent, except that the Contractor shall use the American Bureau of Shipping (ABS) to certify compliance with ABS standards. The contractor shall use the appropriate authority to certify compliance where self-certification is not permissible (e.g. regulatory body requirements, US Public Health Service Certification). The Contractor shall incorporate the process for certification into the Contractor's Quality Assurance process.

The Contractor shall develop a Cutter Specific Certification Plan. This plan shall address the methodology, documentation and government access to certification status and documentation, resources required, individual responsibilities and qualifications, and schedule of significant

events from which more detailed planning can be derived in the next phase. The plan shall span the time frame that encompasses the expected certification of all standards for the Asset.

3.2.3 CONTRACTOR CONFIGURATION DOCUMENTATION

3.2.3.1 General

The Contractor shall develop a Technical Specification and any Contract Design Drawings for the Surface Asset to demonstrate maturity and stability of the design, establish the configuration of all major features, and to define the Asset in sufficient detail to support detail design. The Government and the Contractor shall agree upon a milestone/s that marks the finalization of the Technical Specifications and Contract Design Drawings whereupon they shall be incorporated as configuration control documents. Thereafter through all phases, the Contractor shall provide written or electronic and verbal notification to the Government of any changes to these configuration documents.

3.2.3.2 Develop Surface Asset Technical Specifications

The Contractor shall develop a Surface Asset technical specification (e.g., ship specification). . If the Surface Asset is a cutter that will carry small boats, the Contractor will also develop small boat technical specifications.

3.2.3.3 Contract Design Drawings

The Contractor may propose select drawings, in addition to those listed below, to convey additional configuration information as a supplement to the technical specification. Such drawings will be defined as "contract design drawings" and shall become part of the contractor's configuration documentation.

(a) C4ISR System Block Diagram

(b) Combat System Block Diagram

(c) Electric One Line Diagram

(d) General Arrangements Drawing

(e) Hull Lines Drawing

(f) Hull Table of Offsets

(g) Inboard/Outboard Profile Drawing

(h) Ship Principal Characteristics Summary

(i) Machinery Arrangements Drawing

(j) Midship Section Drawing

3.2.4 PRELIMINARY AND CONTRACT DESIGN

The Contractor shall complete a Preliminary and Contract design for the Surface Asset. The Contractor shall conduct design, analysis and planning to establish the technical feasibility of the proposed design, and to demonstrate compliance with requirements. The Contractor shall provide studies, analyses, calculations, reports, plans, and drawings in accordance with the requirements of this section.

Based upon and continuing from the Functional Design data or previous phase design development, the Contractor shall update or develop and provide the following analyses, drawings, and plans as applicable to the Asset:

Technical Drawings, Analyses, and Information

(a) Ship Principal Characteristics Summary
(b) Hull Lines Drawing
(c) Rudder and Appendages Drawing
(d) Hull Curves of Form
(e) General Arrangements Drawing
(f) Inboard/Outboard Profile Drawing
(g) Topside Configuration Drawing
(h) Anchoring, Mooring, and Towing Arrangement
(i) Mooring and Anchoring Analyses
(j) Small Boat Handling Arrangements Drawing
(k) Launch/Retrieval Analysis
(l) Midship Section
(m) Auxiliary Systems Design Analyses
(n) Auxiliary Systems Diagrams
(o) Machinery Arrangements Drawing
(p) Intake/Uptakes Arrangements Drawings
(q) Engineering Control Center Arrangement
(r) Damage Control Center Arrangement
(s) Propulsion Shafting Arrangement
(t) Electrical Plant Load Analysis
(u) Electric One Line Diagram
(v) Combat System Space Arrangements Drawings
(w) Communications Center Arrangement Drawing

(x) Pilot House and Bridge Wing Arrangements

(y) Combat System Block Diagram

(z) C4ISR System Block Diagram

(aa) Integrated Bridge Block Diagram

(bb) IC System Block Diagram

(cc) Alarm and Indicating Systems Drawing

(dd) Machinery and Electric Plant Control and Monitoring System(s) Block Diagram(s)

(ee) Master Equipment List

(ff) Aviation Facilities Arrangement Drawing

(gg) Food Service Spaces Arrangements

(hh) Arrangements of Living Spaces

(ii) Propulsion Powering & Propulsor Analysis

(jj) Model Tests Report

(kk) Endurance Fuel Calculation

(ll) Intact and Damage Stability and Limiting KG Analysis

(mm) Seakeeping Analysis

(nn) Maneuvering Analysis

(oo) Hull Structure Load and Strength Analysis

(pp) Ship/Shaft Vibration Analysis

(qq) Combat System Analysis

(rr) Air Asset Related Shipboard Systems Analysis

(ss) Survivability and Damage Control System Analysis

(tt) Replenishment at Sea Analysis

(uu) Stores Handling Analysis

(vv) Ammunition Handling Analysis

(ww) Software Acquisition, Development and Integration Plan(s)

(xx) Noise Control Plan

(yy) Weight and Mass Properties Estimate

(zz) Weight Control Plan

(aaa) Baseline Weight Estimate

3.2.5 PLANNING FOR PRODUCTION AND DEPLOYMENT (DETAILED DESIGN AND CONTRUCTION)

The Contractor shall provide a plan for Production and Deployment (Detailed Design and Construction) in accordance with the requirements of section 2 herein.

3.2.6 CRITICAL DESIGN REVIEW (CDR) FOR PRELIMINARY AND CONTRACT DESIGN

In addition to technical reviews, the Contractor shall conduct a CDR at the end of the Preliminary and Contract Design Phase to demonstrate the satisfactory completion of the design work and logistics development of this phase.

3.3 PRODUCTION AND DEPLOYMENT (DETAIL DESIGN AND CONSTRUCTION)

The objective of the Surface Asset Production and Deployment Phase (Detail Design and Construction) is to deliver Surface Asset that meets the readiness and operational capability requirements of the Surface Asset Performance Specification.

3.3.1 GENERAL

The Contractor shall perform all tasks identified in Section 2, General Requirements, in a manner consistent with the objectives of this procurement phase. The Contractor shall provide all engineering, design, integration, technical and support efforts necessary for the development of a complete, accurate technical description of the Surface Asset defined in the task and/or delivery order which meets all of the requirements of the Asset Performance Specification, the Asset Technical Specification, and the Cutter Specific Certification Matrix. This effort shall produce the descriptive documentation that is adequate for use in production/construction/manufacturing, and for training, operation, system integration, maintenance, repair, and upgrading. The Contractor is responsible for the accuracy of the documentation. The Contractor shall construct/manufacture/alter/repair/upgrade and test the Surface Asset in accordance with the design documentation developed for the type of Asset under the task and/or delivery order.

All management and technical plans developed and explicitly required in the previous phase shall be further developed or revised as necessary. These plans shall be executed during this phase of Surface Asset development.

Prior to beginning construction, a Production Readiness Review shall be planned and conducted by the Contractor to demonstrate to the Government the Contractor’s readiness to proceed into Asset construction.

All schedules for Asset design, construction and testing development shall be made readily accessible to the Government.

3.3.2 CONDUCT CERTIFICATION OF STANDARDS

Throughout this phase, the Contractor shall conduct certifications of standards of the Cutter Specific Certification Matrix for the Surface Asset and other applicable standards in accordance with the Cutter Specific Certification Plan. The plan shall be updated to define and schedule all certification activities. A copy of the certification document shall be provided to the Government. The consolidated status of certification of all standards shall be maintained on the Contractor's IPDE for access and review by the Government.

3.3.3 DETAILED DESIGN

The Contractor shall prepare a complete set of detailed design and construction drawings and design calculations necessary for construction of the Asset. The construction requirements of the technical specification shall be incorporated into the drawings, to the extent that the drawings are independent of the technical specifications, and fully describe the construction of the Asset without reference to the technical specifications.

The Contractor shall provide the Government with access to the in-process detail design (e.g., working drawings, purchase technical specifications, bills of material, and any other technical data that is part of the detail design).

All schedules (e.g., design, production, testing, material ordering) shall be accessible to the Government for review.

The Contractor shall implement a Weight Control Program in accordance with the Weight Control Plan.

Based upon and continuing from the previous phase design development, the Contractor shall update or develop and provide the analyses, drawings, and plans listed below for review and, where specified, approval, by the Government. In addition, the Contractor shall update and provide all contract data design products submitted during Preliminary and Contract Design as necessary to reflect design development.

Technical Drawings and Information

(a) Ship Vibration Analysis

(b) Shaft Vibration Analysis

(c) Seawater Cooling Systems Flow Analyses

(d) Final Propulsion Powering Analysis and Propulsor Design Report

(e) Propulsion Plant Computer Modeling

(f) Electrical Harmonic Analysis

(g) Maximum Transient Voltage Dip Calculations

(h) Fault Current Analysis

(i) Protective Device Coordination Study

(j) Regulatory Body Correspondence
(k) Software Requirements Specifications
(l) Quarterly Weight Reports
(m) Anchoring Mock-up
(n) Pilot House, Central Control Station, CIC Model or Mockup
(o) Inclining Experiment Report
(p) BT Agendas (BDT, BST)
(q) AT Agenda & Certification
(r) Pollution Prevention Certificates of Compliance
(s) Certificate for Sanitary Compliance
(t) Panama Canal Tonnage Certificate
(u) Deratting Exemption Certificate
(v) Noise Control Design History
(w) Airborne Noise Survey Report
(x) Machinery Vibration Test Reports
(y) Vibration Survey Report
(z) Scheduled Replacement Items Log
(aa) Master Lubrication Table Report
(bb) Material Safety Data Sheets
(cc) DC Manual & Diagrams
(dd) Mooring Operational Booklet
(ee) Towing Operational Booklet
(ff) Cutter Boat Operational Booklet
(gg) Liquid Loading Instructions Booklet
(hh) Docking Plan
(ii) "As Built" Drawings
(jj) Selected Record Drawings

3.3.4 READINESS REVIEW FOR CONSTRUCTION

The Contractor shall plan and conduct a readiness review in accordance with the requirement of section 2 under Task and Delivery Order Planning.

The Contractor shall conduct a Readiness Review for Construction in order to demonstrate the Contractor's readiness to proceed with production. The date of this review shall occur prior to large-scale construction work on the Asset and at a time mutually agreed upon by the Contractor

and the Government. The Contractor shall adhere to the requirements of the Programmatic Reviews section of attachment J-7.

The Elements that determine readiness include:

(a) Adequate detailed design maturity consistent with the production plan

(b) Material acquisition status

(c) Adequate work package development consistent with the production schedule

(d) Work Force Readiness (including subcontractors)

(e) Facilities Readiness

(f) Test and Certification Readiness

(g) Software development status

3.3.5 SURFACE ASSET CONSTRUCTION

The Contractor shall construct each Surface Asset in accordance with the detail design. Construction shall comprise the total effort of building and testing the Asset, including the preparation of work instructions, shop sketches, and other drawings, diagrams, schedules, plans and data required and/or incidental to the construction effort. The Contractor shall be responsible for the installation and integration of all Government Furnished Equipment (GFE) (listed in Attachment J-14) on the Asset.

.Articles, equipment, materials, and parts required by this contract and provided by the Contractor shall be installed, or placed in the designated stowage location aboard the Asset. Where CFM has a limited shelf life or useful life, it shall be procured and installed to maximize the service life to the Government after Asset delivery.

3.3.6 PLANNING FOR OPERATIONS AND SUPPORT

The Contractor shall provide a plan for operations and support in accordance with the requirements of section 2 herein.

3.3.7 PROTECTION OF THE ASSET DURING ADVERSE ENVIRONMENTAL CONDITIONS

In order to ensure that Surface Assets and material are protected during gales, storms, hurricanes, other destructive weather or adverse environmental conditions, the Contractor shall prepare, maintain and comply with a Heavy Weather Plan (HWP), which assigns responsibilities and prescribes actions to be taken before and during heavy weather conditions.

3.3.8 DEPARTMENT OF LABOR SAFETY AND HEALTH STANDARDS FOR SHIPBUILDING

Attention of the Contractor is directed to the "OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970" (29USC655) and to the "OCCUPATIONAL SAFETY AND HEALTH

STANDARDS FOR SHIPYARD EMPLOYMENT" promulgated thereunder by the Secretary of Labor (29 CFR. 1910 and 1915). These regulations apply to all shipbuilding and related work, as defined in the regulations. Nothing contained in this contract shall be construed as relieving the Contractor from any obligations it may have for compliance with the aforesaid regulations.

3.3.9 COLLISION AND GROUNDING

In the event that a collision or grounding occurs while the Surface Asset is in the possession of the Contractor, the COTR shall be notified immediately and a thorough inspection for damage shall be conducted by the Contractor at no expense to the Government. If necessary, the Contractor shall dry dock the Asset to repair the damage from collision or grounding.

3.3.10 FIRE AND FLOODING PREVENTION

The Contractor shall develop and maintain a system of fire detection, fire prevention, fire fighting capabilities, flooding prevention, flooding detection, flooding repair and dewatering capability to protect the Surface Assets prior to delivery. This system shall be documented in a Fire and Flooding Protection Plan and shall include training, drills, instructions, current organization charts and interfaces with local fire departments. Emergency exit routes shall be clearly marked throughout the Surface Asset to permit rapid and safe evacuation by personnel in case of fire or other emergencies. Brows, gangways, or ramps from ship-to-shore, or ship-to-ways, or to dry dock side, shall be provided in sufficient number to permit the rapid egress, under emergency conditions, of all persons aboard. At least two separate means of egress from the Surface Asset, and at different locations, shall be maintained.

3.3.11 PROTECTION OF UNDERWATER HULL DURING CONSTRUCTION

The Contractor shall provide continuous cathodic protection as soon as Surface Assets are waterborne, using the ship’s cathodic protection system or a temporary cathodic protection system.

3.3.12 TRIALS

The Contractor shall perform the following trials:

1. Builder's Trials (BT):

(a) Builder's Dock Trials (BDT)

(b) Builder's Sea Trials (BST)

2. Acceptance Trials (AT)

The Contractor shall conduct trials to demonstrate that the Asset and all of its systems and equipment operate satisfactorily and are in compliance with the Asset Performance Specification and all other contract requirements. All systems and equipment of the Asset shall, where practicable, be tested to ensure the systems and their components, and equipment are fully exercised and stressed in order to demonstrate proper operation under maximum design load and all modes of operation or configuration. Tests shall demonstrate satisfactory operation in

conditions and loads that exceed the demands of normal operation but may occur during use by the Coast Guard. During the trials conducted by the Contractor, representatives of the Government will exercise no control over the navigation or operation of the Surface Asset, its machinery plant, equipment, or systems. However, such representatives may bring to the Contractor's attention any methods of operation that appear to be unsafe or in conflict with the requirements of the Contract. The Board of Inspection and Survey (INSURV) will assist the government to witness tests and operations, conduct inspections, and conduct evaluations during trials.

The Contractor shall provide trial agendas and proposed trial dates. The Contractor shall confirm the dates for trials at least fourteen (14) days prior to each scheduled date. The dates shall be mutually agreeable to the Contractor and the Government, and in the case of AT, to the Board of Inspection and Survey (INSURV).

The Contractor shall establish an organization suitable for the administration, supervision, and conduct of trials including tug service, dockside personnel, and other services as necessary to dock and undock the Surface Asset. A competent trial crew shall be provided for BST and AT and shall include a properly and appropriately licensed master and chief engineer, a pilot certified for the waters navigated and Surface Asset tonnage, and licensed personnel for communicating with the commercial marine radio telephone operator. Operation of the Surface Asset and its machinery, equipment, and systems shall be in a safe manner and in accordance with the operating instructions. The Contractor shall perform tests, record data, and compute trial performance and results. The data requirements of Section 6 of SNAME T&R Bulletin Number 3-47 shall be integrated into trial plans, procedures, and reports as appropriate. Trial data shall be readily available to the Government observers, and trial results shall be posted. Separate and complete trial reports for BT and AT shall be prepared. A preliminary BT trial report shall be available to the government at the time of AT. This report shall include the status of BT deficiencies and copies of data obtained during BT.

The Contractor shall provide all fuel to operate the Surface Asset during the trials. All fuel, hydraulic, and lubrication oil and other operating liquids tanks shall be full with their respective fluids at the time of delivery.

BDT and BST will be witnessed by the COTR and other Government observers. AT will be witnessed by INSURV and other Government observers. The Contractor shall provide subsistence for Government representatives and observers while the Surface Asset is at sea. When the Surface Asset is out overnight, on-board berthing accommodations shall be provided. Transportation between the Surface Asset and shore, and between points of debarkation and the shipyard, shall be provided, as required.

The Contractor shall obtain frequency authorization from the Federal Communication Commission for use of commercial ship-ship and ship-shore channels.

Trials shall be rescheduled to a time agreed upon by the government in cases where the scheduled time is not sufficient to determine the performance of the Surface Asset and its systems.

Shaft torsionmeter(s) and fuel meters to determine shaft torque and fuel consumption during trials shall be provided, calibrated and installed by the Contractor. The Contractor shall provide calibration certification of these meters and all other instrumentation and equipment needed for the trials. The Contractor shall provide, calibrate, and install temporary instrumentation necessary for obtaining trials data. The Contractor shall calibrate permanently installed instruments prior to trials. After satisfactory completion of trials, the Contractor shall remove temporary instrumentation and restore systems to their normal operating condition.

BST and AT shall be performed with the Asset at the full load draft and trim. High-speed craft shall be loaded in accordance with the Cutter Specific Certification Matrix.

3.3.12.1 Builder's Trials (BT)

BDT shall demonstrate the readiness of the Surface Asset for sea trials. The trial shall be performed in accordance with SNAME T&R Bulletin Number 3-39 and the requirements herein.

Prior to BDT, the Contractor shall demonstrate to the satisfaction of the Government that all alarms and safety devices and firefighting and other damage control systems for compartments, systems, and equipment affected by the BDT are in proper working order. All instrumentation for equipment to be operated shall be in calibration.

Tests that cannot be performed with the Surface Asset moored shall be accomplished during BST. BST shall be performed as soon after the BDT as practicable, and shall demonstrate that the Surface Asset is seaworthy and meets all contract requirements. The Contractor shall conduct BST as many times as necessary to demonstrate compliance with contract requirements and to be ready in all aspects for AT. The scheduling of such additional trials shall be mutually agreed upon by the Contractor and the Government.

Prior to BST, the Contractor shall certify to the COTR that the Surface Asset is ready for sea trials and in a state of material readiness for any emergency possible at sea, including collision or other catastrophe. The minimum readiness shall include:

- Ships boats shall be fully operational and fitted out and provisioned as lifeboats.
- Inflatable lifeboats in sealed containers shall be properly stowed and the Contractor shall verify sufficient quantity and that the latest inspection has occurred within 12 months.
- EPIRBs, Life rings and float lights shall be supplied and in stowage brackets.
- Life jackets for all personnel embarked plus 5 percent spares shall be on board and properly distributed.
- The Contractor shall provide for emergency medical care of all personnel on board during the trials.
- Firefighting and portable extinguishers shall have been demonstrated and properly stowed for trials.

- Fire and abandon ship bills shall have been prepared and drills held as part of trial preparation just prior to getting underway

- All navigation-at-sea devices and equipment shall have been tested and be onboard.

- Emergency Escape Breathing Devices (EEBDs) and other personnel-escape or protective devices required to be furnished by the Contractor or provided by the Government shall be on board and properly stowed. The Contractor shall familiarize all sea trial personnel with the proper operation of EEBDs and other personal lifesaving equipment.

The certification shall identify and schedule for completion all Contractor-responsible items that will be incomplete at BST.

Prior to the start of BST, the following prerequisites shall be met:

(1) BDT and all Contractor-responsible pre-BST tests shall have been completed

(2) All installations of equipment, furniture, and systems necessary to the conduct of the trial shall be completed and in working order. All labeling, painting, sheathing, insulation, and deck coverings shall be completed except where it may interfere with the conduct of the trial.

(3) Either a deadweight survey/sally test or a preliminary inclining experiment shall have been performed no earlier than 60 days before BST and the results certified in writing to the Government sufficient to show that the Surface Asset meets stability requirements and is safe for sea.

(4) All Contractor-responsible discrepancies brought to the attention of the Contractor by the Government shall be corrected or the COTR's permission obtained to conduct the trial prior to completion of the item.

The COTR will perform a simulated INSURV inspection during BST. The simulated inspection will be performed using the current version of INSURVINST 4730.1 as a guide. The Contractor shall function as the presenting authority and the COTR will function as INSURV. The COTR will designate representatives to act as INSURV inspectors and inspect the Surface Asset and observe tests. The Contractor shall appoint persons knowledgeable in each of the inspected areas to accompany the COTR's representatives. Trial cards will be issued to describe each reported deficiency found.

BST shall be conducted in accordance with SNAME T&R Bulletin 3-47. All of the objectives of Section 1.5 shall apply and all of the tests specified in Sections 2 through 4 shall be conducted unless waived by the Government. The Contractor and the Government shall agree on which tests need only be conducted on the first of a class of new construction or major modification Assets. Any additional tests shall be conducted as necessary to demonstrate compliance with contract requirements. Additional requirements for specific tests are as follows:

(a) The Contractor shall demonstrate trial speed and ascertain actual propulsion plant service margin and engine margin as defined in the Cutter Specific Certification Matrix.

(b) Fuel Economy trials shall be performed during BST at the shaft power level required to drive the Surface Asset at the speed upon which the endurance calculations were based when in the full-load condition. In addition, for the lead Surface Asset, fuel consumption measurements shall be taken at four additional speeds to be mutually agreed upon by the Contractor and the Government in the normal ahead mode, with the Surface Asset in the full-load condition (calm water, clean bottom and propeller). If the Surface Asset has twin screws, fuel consumption measurements shall also be taken in the trail shaft mode at two additional speeds (to be agreed upon by the Contractor and the Government) and the maximum speed on a single shaft with the Surface Asset in the full-load condition (calm water, clean bottom and propeller).

(c) Standardization Trials. The standardization trials shall include a minimum of 5 speeds, including one point at the sustained speed achievable at 85% of installed power, and other speeds to demonstrate compliance with the standards of the Cutter Specific Certification Matrix.

(d) Turning Circles. At a minimum, turning circle trials shall be run at three approach speeds, with three rudder angles at each speed. For a single screw Surface Asset, turning circle trials may be performed with turns to either port or starboard, except that one turning circle shall be repeated, at each speed, with a turn in the opposite direction. For a twin screw Surface Asset, the turning circle trials may be performed with turns to either port or starboard, except that one additional turning circle shall be performed in the opposite direction.

(e) Zig-Zag Maneuvers. Both 10/10 and 20/20 zig-zag maneuvers shall be performed at a speed corresponding to the maximum achievable trial shaft RPM and one other speed.

(f) Stopping Tests. Stopping tests shall be carried out from an initial speed corresponding to the maximum achievable trial shaft RPM and from another initial speed agreed upon by the Contractor and the Government.

An airborne noise survey shall be performed during BST. Noise measurements shall be taken in accordance with ISO 2923.

An underway vibration survey shall be performed in accordance with the procedures of ISO 4867 (1984) and 4868 (1984). Single amplitude displacement shall be measured for the hull girder superstructure, and mast with the Surface Asset underway in water with a minimum depth of not less than five times the Surface Asset's mean draft. A steady acceleration run in increments of 5 to 10 rpm shall be conducted to determine critical operating frequencies. Steady speed runs shall be performed at 5rpm increments from ½ full power rpm to full power rpm. Accelerometer measurements shall be taken during this run, inside the hull over the propeller, to determine its cavitation inception speeds. Additional runs of smaller rpm increments shall be required if vibration levels are measured in excess of the required limits and the Asset performance specification.

Propulsion system vibration testing shall be conducted in accordance with ANSI S2.27-2001 or other industry or recognized standard identified by the contractor for defining the process and vibration limits.

The government will provide to the Contractor, one copy of each reported deficiency identified during BST as soon as practicable after the completion of BST. The COTR and the Contractor will, in joint meetings, bilaterally and expeditiously screen all trial cards and identify whether each reported deficiency is the responsibility of the Contractor or the Government. The resultant assignment of responsibility will be subject to approval by the Contracting officer.

3.3.12.2 Acceptance Trials (AT)

Successful completion of BT is a prerequisite to AT. Successful completion of AT is a prerequisite to preliminary acceptance of the Asset by the Government. The government will determine if the Contractor and the Asset are ready for AT. The Contractor shall conduct AT as many times as necessary to demonstrate compliance with contract requirements. The scheduling of such additional trials shall be mutually agreed upon by the Contractor and the Government.

Acceptance trials shall be performed at sea and in port in accordance with INSURV instructions to demonstrate compliance with the contract requirements. Tests specified under BT which are requested by INSURV shall be repeated during AT. The Contractor shall record the results of AT. Copies of each test procedure with data results shall be available for use by Government representatives.

All items of safety required for or identified during the BST shall be implemented prior to the beginning of AT. In addition, all compartments and topside areas shall be complete, including lagging, insulation, deck covering, labeling, and painting. The Asset shall be clean. All equipment and systems shall work as designed and intended. The Contractor shall provide a written certification that all previously identified Contractor-responsible deficiencies have been corrected or deferred. The Contractor shall provide documentation of satisfactory verification of each requirement of the Asset Performance Specification planned for pre-delivery, with enumeration of any requirements not yet verified. The COTR will present this certification to the INSURV, along with copies of all incomplete BST trial cards, upon arrival for trials. Data recorded during earlier tests and trials, together with analysis of this data, shall be made available. Technical documentation for the operation and testing shall be made available. Technical manuals shall be available during the trials.

After completion of the at-sea portion of AT, the Asset shall be returned to the Contractor's facilities, and selected equipment, as directed by the COTR, shall be opened for examination. Following the examination or correction of defects or deficiencies, the equipment shall be made ready for service and re-tested.

After completion of AT and before delivery of the Asset, all Contractor-responsible work shall be completed and all defects corrected or resolved to the satisfaction of the Government.

The Contractor shall conduct an inclining experiment of the Asset not earlier than two months before AT and before delivery.

3.3.12.3 Final Contract Trials (FCT)

Prior to final acceptance by the Government, the Asset may undergo FCT. During such trials, the Asset will be operated by the Government. Representatives of the Contractor shall attend the trials.

FCT will consist of operation at a location to be designated by the Government. The FCT trial agenda, plan, procedures, and report will be prepared by the Government as necessary. Any trials or tests previously conducted during AT may be repeated.

Other demonstrations or trials requiring actual operation of the Surface Asset shall be in accordance with the Contractor's TEPP and approved by the Government. The Government will provide operational personnel as appropriate to properly support such events.

3.3.13 DELIVERY OF COMPLETED ASSET

(a) The Contractor shall be responsible for scheduling an interval of a minimum of 30 days between the satisfactory completion of Acceptance Trials and delivery of the Asset. During this period, the Contractor shall satisfactorily correct all Contractor-responsible deficiencies, whether discovered before, during, or after completion of Acceptance Trials.

(b) Upon satisfactory completion of Acceptance Trials and of the correction of deficiencies, the Contractor shall deliver the Asset to the Government for preliminary acceptance at the location established in the delivery order.

(c) When delivery occurs at the construction shipyard, the Contractor shall schedule a Post-Delivery Availability (PDA) of at least 45 days, which will commence upon preliminary acceptance. The primary purpose of PDA is to prepare the Surface Asset and crew for Coast Guard operations. The Contractor shall provide all Surface Asset pier services including but not limited to electrical power, potable water, fire main, sewage, telephone and data transmission, trash removal. During PDA, the Government may make the Asset available to the Contractor.

(d) A Post Shakedown Availability (PSA) will occur following Final Contract Trials or at the end of the Guaranty Period, and at a location and facility selected by the Government. With the permission of the Government, and on a not-to-interfere basis with crew or facility work or operation, the Contractor shall use this availability for the correction of defects not previously corrected and for the performance of any additional work required by contract modification.

(e) The Contractor shall exercise reasonable care to protect the Asset at all times until the delivery of the Asset, and thereafter during such times as the Asset is at the Contractor's plant during the guaranty period. During such periods, while the Asset is at the Contractor's plant, the Contractor shall provide assistance to protect and service the Asset, and shall effect any correction of defects or performance of uncompleted work, to the extent permitted or required by the Government.

(f) During the Guaranty Period, the Government will keep the Contractor appraised of the location of the Asset and may make the Asset available to the maximum extent possible consistent with the Asset's mission and crew needs for expeditious correction of defects.

(g) Prior to the end of the Guaranty Period, the Government will provide the Contractor with an itemized list of any remaining defects or incomplete work. Upon correction of the defects and completion of the work, the Government will accept final delivery of the Asset.

3.3.14 NUCLEUS CREW FACILITIES

The Nucleus Crews are composed of the ship's force complements for each Asset. These facilities shall be provided in the vicinity of the delivery location for each Asset. The requirements for the facilities for Nucleus Crew 1 are identified in Section 2.

The Nucleus Crew 2 will total approximately 20% of the Asset complement. These personnel shall have reasonable access to the Contractor's plant at all reasonable times for a period commencing approximately 4 months prior to the builder's trials.

The Nucleus Crew 3 will be comprised of the remainder of ship's personnel. These personnel shall have full access at all times to the delivered Asset, for a period commencing at delivery through the PDA.

The Contractor shall provide the Nucleus Crew 2 with separate offices at the Contractor's plant, similar and of proportional area to those of the PMRO, which include the necessary space, furnishings and facilities for a minimum of all officers and the number of crew up to the amount specified above. Concurrently, the Contractor shall make available telephone services, classified material and cash stowage facilities, a network supported conference room for daily meetings, and rest rooms/shower. The Contractor shall provide parking spaces in comparable number and proximity to the offices as for his own employees, plus for three official vehicles.

In addition to the requirements for the PMRO and Nucleus crew 1, the Contractor shall equip these spaces for Nucleus Crew 2 with the following:

(a) 1 plain paper facsimile machine

(b) 1 telephone for each officer and three for the balance of the crew

(c) 2 reproduction machines (copiers) with collator, enlarge/reduce and double-side capability.

The Contractor shall provide an office automation capability similar to that provided to the PMRO. The Contractor shall provide workstations for each person and 2 high-capacity laser printers (HP LaserJet IV SI or equivalent). The Nucleus Crew shall also be provided with IPDE access.

Nucleus Crew facilities shall be located near the Assets under this contract such that no more than an approximate 15 minute walk or 5 minute motor vehicle/boat ride is required of nucleus crew members for access to the Asset.

A minimum of 20 parking spaces in the shipyard employee parking lot shall be available to the Nucleus Crew 2. A minimum number of parking spaces equal to 60 % of the Asset's complement in the shipyard employee parking lot shall be available to the Nucleus Crew 3. If such parking spaces are distant from the Contractor's plant, any personnel transportation services

available to shipyard personnel between parking lot and shipyard shall be available to the ship's personnel.

To the extent that each nucleus crew's activities will not interfere with the Contractor's obligations to deliver the Asset in accordance with the contract terms and conditions, all nucleus crew members shall be allowed reasonable access to the Asset for the following activities:

(a) Indoctrination and familiarization with the general arrangement and condition of the Asset as part of the Contractor's training program;

(b) Observance during sea trials to the extent permitted by available Asset's accommodations;

(c) Assisting the PMRO in conducting inspections of the Asset; and

(d) Assisting the PMRO personnel in the witnessing of tests.

3.4 OPERATIONS AND SUPPORT

The objective of the Surface Asset Operations and Support Phase is to assist in maintaining reliability, availability, maintainability and operational capability of Surface Assets.

3.4.1 GENERAL

The Contractor shall perform all tasks identified in Section 2, General Requirements, in a manner consistent with the objectives of this procurement phase.

3.4.2 OPERATIONS AND SUPPORT

The Contractor shall execute all contractor responsibilities in accordance with the approved Surface Asset specific ISP, logistics requirements matrix and CONOPS.

3.5 DISPOSAL

The objective of the Surface Asset Disposal Phase is to demilitarize and dispose of Surface Assets in accordance with all legal and regulatory requirements relating to safety, security and the environment at the end of its service life.

3.5.1 GENERAL

The Contractor shall perform all tasks identified in Section 2, General Requirements, in a manner consistent with the objectives of this procurement phase.

3.5.2 DISPOSAL PLAN

The Contractor shall develop a Disposal Plan at least two years prior to the phase-out, decommissioning, or removal from service of any Surface Asset. The plan will include at a minimum, methodology, cost, environmental issues and concerns, personnel impacts, equipment disposal, and permits.

3.5.3 DISPOSAL

The Contractor shall provide all services, labor, tools, tooling, materials when applicable, and equipment, except those listed as Government furnished, to properly decommission, transport, dispose of, store, preserve, or reactivate the Surface Asset in accordance with the Disposal Plan and the ISP. The Government reserves the right to unilaterally exercise this requirement on a per-Asset basis.